**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1. **Product identifier**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>N-(TRIMETHYLSILYL)MORPHOLINE</td>
</tr>
<tr>
<td>Product code</td>
<td>SIT8596.0</td>
</tr>
<tr>
<td>Formula</td>
<td>C7H17NOSi</td>
</tr>
<tr>
<td>Synonyms</td>
<td>MORPHOLINYLTRIMETHYLSILANE; 4-(TRIMETHYLSILYL)MORPHOLINE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOSILANE</td>
</tr>
</tbody>
</table>

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture: Chemical intermediate
For research use only

1.3. **Details of the supplier of the safety data sheet**

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. **Emergency telephone number**

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

**SECTION 2: Emergency telephone number**

2.1. **Classification of the substance or mixture**

**GHS-US classification**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq.</td>
<td>H226</td>
</tr>
<tr>
<td>Skin Corr.</td>
<td>H314</td>
</tr>
<tr>
<td>Eye Dam.</td>
<td>H318</td>
</tr>
<tr>
<td>STOT SE</td>
<td>H335</td>
</tr>
</tbody>
</table>

Full text of H statements : see section 16

2.2. **Label elements**

**GHS-US labeling**

Hazard pictograms (GHS-US):

- GHS02
- GHS05
- GHS07

Signal word (GHS-US): Danger

Hazard statements (GHS-US):
- H226 - Flammable liquid and vapor
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H335 - May cause respiratory irritation

Precautionary statements (GHS-US):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P210 - Keep away from heat, open flames, sparks. - No smoking
- P240 - Ground/Bond container and receiving equipment
- P241 - Use explosion-proof electrical equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe vapors
- P264 - Wash hands thoroughly after handling
- P271 - Use only outdoors or in a well-ventilated area
- P301 + P330 + P331 - If swallowed: rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
- P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
- P305 + P351 + P338 - If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a doctor
N-(TRIMETHYLSILYL)MORPHOLINE
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2.3. Other hazards

Other hazards not contributing to the classification: Acetic acid is liberated on contact with moisture and living tissue. The US ACGIH (TWA) for acetic acid is 10 ppm.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>N-(TRIMETHYLSILYL)MORPHOLINE</td>
</tr>
<tr>
<td>CAS No</td>
<td>13368-42-8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Trimethylsilylmorpholine (CAS No)</td>
<td>13368-42-8</td>
<td>95-100</td>
<td>Flam. Liq. 3, H226 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation: May cause irritation to the respiratory tract.

Symptoms/injuries after skin contact: Causes (severe) skin burns.

Symptoms/injuries after eye contact: Causes serious eye damage.

Symptoms/injuries after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Eliminate ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection.”

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls: Provide local exhaust or general room ventilation.
Personal protective equipment: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection: Neoprene or nitrile rubber gloves.
Eye protection: Chemical goggles or face shield. Contact lenses should not be worn.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: Clear liquid.
Molecular mass: 159.3 g/mol
Color: Straw.

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Odor: Mild.
Odor threshold: No data available
Refractive index: 1.441
pH: No data available
Relative evaporation rate (butyl acetate=1): ~ 1
Melting point: < 0 °C
Freezing point: No data available
Boiling point: 160 °C
Flash point: 27 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Flammable liquid and vapor
Vapor pressure: < 5 mm Hg @ 25°C
Relative vapor density at 20 °C: > 1
Relative density: 0.897
VOC content: 100 %
Solubility: Insoluble in water. Reacts with water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosion limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable when stored in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air liberating hexamethyldisiloxane (flammable) and morpholine. Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Morpholine. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified
Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): May cause respiratory irritation.
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Potential Adverse human health effects and symptoms: Chronic Toxicity: This material generates morpholine on hydrolysis. Morpholine is a severe eye irritant and tumorigenic data has been reported for the skin, lungs and thorax.

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### Symptoms/injuries after inhalation
- May cause irritation to the respiratory tract.

### Symptoms/injuries after skin contact
- Causes (severe) skin burns.

### Symptoms/injuries after eye contact
- Causes serious eye damage.

### Symptoms/injuries after ingestion
- May be harmful if swallowed.

### Reason for classification
- Expert judgment

### SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>12.1. Toxicity</th>
<th>No additional information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.2. Persistence and degradability</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.4. Mobility in soil</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.5. Other adverse effects</td>
<td>This substance may be hazardous to the environment.</td>
</tr>
</tbody>
</table>

### SECTION 13: Disposal considerations

<table>
<thead>
<tr>
<th>Waste treatment methods</th>
<th>Do not dispose of waste into sewer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste disposal recommendations</td>
<td>Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Handle empty containers with care because residual vapors are flammable.</td>
</tr>
<tr>
<td>Ecology - waste materials</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>14.1. UN number</th>
<th>2924</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (DOT)</td>
<td>UN2924</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.2. UN proper shipping name</th>
<th>Flammable liquids, corrosive, n.o.s. (N-(TRIMETHYLSILYL)MORPHOLINE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class (DOT)</td>
<td>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>3 - Flammable liquid 8 - Corrosive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DOT Symbols</th>
<th>G - Identifies PSN requiring a technical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (DOT)</td>
<td>III - Minor Danger</td>
</tr>
<tr>
<td>DOT Packaging Exceptions (49 CFR 173.xxx)</td>
<td>150</td>
</tr>
<tr>
<td>DOT Packaging Non Bulk (49 CFR 173.xxx)</td>
<td>203</td>
</tr>
<tr>
<td>DOT Packaging Bulk (49 CFR 173.xxx)</td>
<td>242</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3. Additional information</th>
<th>Emergency Response Guide (ERG) Number 132</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other information</td>
<td>No supplementary information available.</td>
</tr>
</tbody>
</table>

### Transport by sea

<table>
<thead>
<tr>
<th>DOT Vessel Stowage Location</th>
<th>A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Vessel Stowage Other</td>
<td>40 - Stow “clear of living quarters”</td>
</tr>
</tbody>
</table>
Air transport
DOT Quantity Limitations Passenger aircraft/rail : 5 L
(49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

N-(TRIMETHYLSILYL)MORPHOLINE (13368-42-8)

TSCA Exemption/Exclusion

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

N-Trimethylsilylmorpholine (13368-42-8)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
No additional information available

15.3. US State regulations

N-(TRIMETHYLSILYL)MORPHOLINE (13368-42-8)

<table>
<thead>
<tr>
<th>State/Proposition</th>
<th>Carcinogens List</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Female</th>
<th>Reproductive Toxicity - Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

N-Trimethylsilylmorpholine (13368-42-8)

<table>
<thead>
<tr>
<th>State/Proposition</th>
<th>Carcinogens List</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Female</th>
<th>Reproductive Toxicity - Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Non-significant risk level (NSRL)</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Abbreviations and acronyms
Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 3 Serious Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.
The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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